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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,649	08/17/2001	Yoji-Ito	030662-077	4138

7590 09/10/2004

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EXAMINER	
NGO, HUYEN LE	
ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/913,649	ITO ET AL.	
	Examiner	Art Unit	
	Julie-Huyen L. Ngo	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *14-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 24-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election **without** traverse of species A, which readable on claims 1-13 and 24-26, in the reply filed on 10/21/03 is acknowledged.

Claims 14-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-7 and 24-25 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. US6380996B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because

- features in claims 1-4, 7 and 24-25 of instant application correspond and similar to the features in claims 1, 7, 10 and 11 of U.S. Patent No. US6380996B1.
- features in claims 5-6 of instant application corresponds and similar to the features in claims 8 and 9 of U.S. Patent No. US6380996B1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 10-13 and 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Yokoyama et al. (US6380996B1).

With respect to claims 1 and 24, Yokoyama et al. teach (Fig. 2) an optical compensatory sheet having-a transparent support and an optically anisotropic layer formed from liquid-crystal molecules aligned in an average inclined an angle of less than 5° (in abstract), wherein the optical compensatory sheet has a retardation value in plane defined by the following formula in the range of 10 to 1,000 nm and a retardation

value along the thickness direction defined by the following formula in the range of 10 to 1, 000 nm (col. 36 lines 44-66):

Re=(nx - ny) x d

Rth= [{(nx+ny)/2}-nx] x d

in which Re is the retardation value in plane; Rth is- the retardation value along the thickness direction; each of nx and ny is a refractive index-in the plane of the optical compensatory sheet; nz is a refractive index, along the thickness direction of the optical compensatory sheet; and d is the thickness of -the optical compensatory sheet; wherein

Claim 2:

- the optical compensatory sheet has a retardation value in plane in the range of 20 to 200 nm (col. 36 lines 46-48).

Claim 3:

- the optical compensatory sheet has a retardation value along the thickness direction in the range of 70 to 500 nm (col. 36 lines 58-61).

Claim 4:

- the transparent support has an optically uniaxial birefringence or-an optically biaxial birefringence (col. 36 lines 42=44).

Claim 5:

- the transparent support has a retardation value in plane defined by the following formula in the range of 10 to 1, 000 nm: Re=(nx-ny)xd in which Re is the retardation value in-plane; each of nX and ny is a refractive index in the plane of

the support; nz is a refractive index along the thickness direction-of the support, and d is the thickness of the support (col. 35 lines 55-56).

Claim 6:

- the transparent support has the retardation value along the thickness direction defined by the following, formula in the range of 10Ito 1,000 nm: Rth=[(-(nx+ny)/2y-nz]xd in which Rth is the retardation value along the thickness direction of the support, each of nx and ny is a refractive index in the plane of the support; nz is a refractive index along the thickness direction of the support; and d is the thickness of the support (col. 35 line 65 to col. 36 line 9).

Claim 7:

- the liquid crystal molecules are discotic liquid crystal molecules (col. 33 lines1-2),

Claims 8 and 10-11:

- as disclosed in Figs. 1 or 2, the liquid crystal cell 11-13/21-23 can be considered as a second optical compensatory sheet formed from rod-like liquid crystal molecules.

Claim 12:

- as disclosed in Fig. 1, the liquid crystal cell 11-13 can be considered as a second optical compensatory sheet formed from rod-like liquid crystal molecules 12. Therefore, an average direction of lines obtained by projecting the normals of discotic planes of discotic liquid crystal molecules 14 in the optically anisotropic layer onto the transparent support 13 is essentially parallel or perpendicular to an average direction of lines obtained by projecting the long axes of rod-like liquid

crystal molecules in the-second optically anisotropic layer onto the transparent support.

Claim 13:

- the transparent support has an optically uniaxial birefringence or an optically biaxial birefringence, and an average direction of lines obtained by projecting the long axes of rod-like liquid crystal molecules in the second optically anisotropic layer onto the support is essentially parallel or perpendicular to the slow axis in plane of the support.

Claim 25:

- the elliptically polarizing plate comprises-the optically anisotropic layer the transparent support, the polarizing membrane and the transparent protective film it this order (col. 82 lines 25-34).

Claim 26:

Yokoyama et al. teach (Fig. 2) forming a liquid crystal display comprising a liquid crystal cell 21-23 of VA mode and two polarizing elements (col. 3 lines 5-6) placed on both sides of the cell, wherein at least one of-the polarizing elements comprises a transparent protective film a polarizing membrane, and an optical compensatory sheet having a transparent support and an-optically anisotropic layer formed from liquid crystal molecules aligned in an average inclined angle of less than 5°, said optical compensatory sheet has a retardation value in plane defined by the following formula in

the range of 10 to 1,000 nm, and a retardation value along the thickness direction defined by the following formula in the range of 10 to 1, 000 nm:

Re=(nx - ny) x d

Rth= [{(nx+ny)/2}-nx] x d

in which Re is the retardation value in plane; Rth is- the retardation value along the thickness direction; each of nx and ny is a refractive index-in the plane of the optical compensatory sheet; nz is a refractive index, along the thickness direction of the optical compensatory sheet; and d is the thickness of the optical compensatory sheet

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 10-13 and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawata et al. (EP928984) provided in Applicants' IDS.

With respect to claims 1 and 24, Kawata et al. teach (Fig. 2) forming an optical compensatory sheet having-a transparent support and an optically anisotropic layer formed from liquid-crystal molecules and aligned in an average inclined angle of less than 5° (in abstract), wherein the optical compensatory sheet has a retardation value in plane defined by the following formula. in the range of 10 to 1,000 nm and a retardation value along the thickness direction defined by the following formula in the range of 10 to

1, 000 nm (examples in pages 29-57 has the same manufacture processes with reference of US application US6380996B1; therefore, the an optical compensatory sheet must have inherently the same physical properties of Re and Rth):

Re= (nx - ny) x d

Rth= [{(nx+ny)/2}-nx] x d

in which Re is the retardation value in plane; Rth is- the retardation value along the thickness direction; each of nx and ny is a refractive index-in the plane of the optical compensatory sheet; nz is a refractive index, along the thickness direction of the optical compensatory sheet; and d is the thickness of the optical compensatory sheet; wherein

Claim 2:

- the optical compensatory sheet has a retardation value in plane in the range of 20 to 200 nm (examples in pages 29-57 has the same manufacture processes with reference of US application US6380996B1; therefore, the optical compensatory sheet must have inherently the same physical properties of Re and Rth).

Claim 3:

- the optical compensatory sheet has a. retardation value along the thickness direction in the range of 70 to 500 nm (examples in pages 29-57 has the same manufacture processes with reference of US application US6380996B1; therefore, the optical compensatory sheet must have inherently the same physical properties of Re and Rth).

Claim 4:

- the transparent support (substrate) has an optically uniaxial birefringence or-an optically biaxial birefringence (examples in pages 29-57 has; therefore, the same manufacture processes with reference of US application US6380996B1 the transparent support must have inherently the same physical properties of Re and Rth).

Claim 5:

- the transparent support (substrate) has a retardation value in plane defined by the following formula in the range of 10 to 1, 000 nm: Re=(nx-ny)xd in which Re' is the retardation value. in- plane; each of nX and ny is a refractive index in the plane of the support; nz is a refractive index along the thickness direction-of the support, and d is the thickness of the support (examples in pages 29-57 has the same manufacture processes with reference of US application US6380996B1; therefore, the transparent support must have inherently the same physical properties of Re and Rth).

Claim 6:

- the transparent support (substrate) has the retardation value along the thickness direction defined by the following, formula in the range of 10lto 1,000 nm: Rth=[(-(nx+ny)/2y-nz]xd in which Rth is the retardation value along the thickness direction of the support, each of nx and ny is a refractive index in the plane of the support; nz is a refractive index along the thickness direction of the support; and d is. the thickness of the support (examples in pages 29-57 has the same manufacture processes with reference of US application US6380996B1;

therefore, the transparent support must have inherently the same physical properties of Re and Rth).

Claim 7:

- the liquid crystal molecules are discotic liquid crystal molecules (abstract),

Claims 8 and 10-11:

- as disclosed in Figs. 1 or 2, the liquid crystal cell 11-13/21-23 can be considered as a second optical compensatory sheet formed from rod-like liquid crystal molecules.

Claim 12:

- as disclosed in Fig. 1, the liquid crystal cell 11-13 can be considered as a second optical compensatory sheet formed from rod-like liquid crystal molecules 12. Therefore, an average direction of lines obtained by projecting the normals of discotic planes of discotic liquid crystal molecules 14 in the optically anisotropic layer onto the transparent support 13 is essentially parallel or perpendicular to an average direction of lines obtained by projecting the long axes of rod-like liquid crystal molecules in the-second optically anisotropic layer onto the transparent support.

Claim 13:

- the transparent support has an optically uniaxial birefringence or an optically biaxial birefringence, and an average direction of lines obtained by projecting the long axes of rod-like liquid crystal molecules in the second optically anisotropic

layer onto the support is essentially parallel or perpendicular to the slow axis in plane of the support.

Claim 25:

- the elliptically polarizing plate comprises-the optically anisotropic layer, the transparent support, the polarizing membrane (paragraphs 2-5) and the transparent protective film (adhesive layer, paragraph 141) this order

With respect to claim 26, Yokoyama et al. teach (Fig. 2) forming a liquid crystal display comprising a liquid crystal cell 21-23 of VA mode and two polarizing elements (paragraph 2-5) placed on both sides of the cell, wherein at least one of-the polarizing elements comprises a transparent protective film (adhesive layer, paragraph 141), a polarizing membrane, and an optical compensatory sheet having a transparent support and an-optically anisotropic layer formed from liquid crystal molecules aligned in an average inclined angle of less than 5°, said optical compensatory sheet has a retardation value in plane defined by the following formula. in the range of 10 to 1,000 nm, and a retardation value along the thickness direction defined by the following formula in the range of 10 to 1, 000 nm (examples in pages 29-57 has the same manufacture processes with reference of US application US6380996B1; therefore, the an optical compensatory sheet must have inherently the same physical properties of Re and Rth):

Re=(nx - ny) x d

Rth= [{(nx+ny)/2}-nx] x d

in which Re is the retardation value in plane; Rth is- the retardation value along the thickness direction; each of nx and ny is a refractive index-in the plane of the optical compensatory sheet; nz is a refractive index, along the thickness direction of the optical compensatory sheet; and d is the thickness of the optical compensatory sheet.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama et al. (US6380996B1) as applied above to claims 1-8, 10-13 and 24-26, and further in view of Ichihashi et al. (US6519016B1).

Yokoyama et al. fail to disclose that the-optical compensatory sheet comprising the rod-like liquid crystal molecules r in the second optically anisotropic layer B, which are aligned in an average inclined angle to be less than 5°.

Ichihashi et al. teach (Fig. 1) forming an optical compensatory sheet comprising rod-like liquid crystal molecules r in the second optically anisotropic layer B, which are aligned in an average inclined angle to be of zero degree less than 5° for operating within a wide wavelength region (col. 1 line 38-39).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the-optical compensatory sheet disclosed by Yokoyama et al. with the second optically anisotropic layer B of the rod-like liquid crystal molecules, which are aligned in an average inclined angle to be of zero degree less than 5° for operating within a wide wavelength region (col. 1 line 38-39).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata et al. (EP928984) as applied above to claims 1-8, 10-13 and 24-26, and further in view of Ichihashi et al. (US6519016B1).

Kawata et al. fail to disclose the-optical compensatory sheet comprising the rod-like liquid crystal molecules r in the second optically anisotropic layer B, which are aligned in an average inclined angle to be less than 5°.

Ichihashi et al. teach (Fig. 1) forming the-optical compensatory sheet comprising the rod-like liquid crystal molecules r in the second optically anisotropic layer B, which are aligned in an average inclined angle to be of zero degree less than 5° for operating within a wide wavelength region (col. 1 line 38-39).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the-optical compensatory sheet disclosed by Kawata et al. with the second optically anisotropic layer B of the rod-like liquid crystal molecules, which are aligned in an average inclined angle to be of zero degree less than 5° for operating within a wide wavelength region (col. 1 line 38-39).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Arakawa (US 5528400 A) discloses a liquid crystal display device wherein the optically anisotropic film having an optic axis in a direction inclined at 5 to 50 degrees from the normal is prepared by casting a polymer solution on support to form a film, and giving shearing stress between both sides of the film.

Aminaka et al. (US 6064457A) disclose a liquid crystal display comprises a liquid crystal cell with an optically anisotropic layer contains discotic compounds, which have The average inclined angle is preferably in the range of 15 to 50 degrees.

Matsuoka et al. (US 6245398 B1) disclose an optically anisotropic sheet containing discotic liquid crystal molecules twisted with optically active triphenylene compound, which has an average inclined angle in the range of 50 degrees to 90 degrees as essentially vertical alignment of the molecules.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on T-Friday.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. Robert H. Kim can be reached at (571) 272-2293.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

September 9, 2004

Julie Huyen L. Ngo
Primary Examiner
Art Unit 2871